

Amendments to the Claims:

Listing of the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

24. (currently amended) An immunogenic composition comprising

(a) a first isolated polynucleotide which encodes a mutated *B. anthracis* lethal factor (LF) protein, or a fragment thereof that contains amino acids 42 to 285 of SEQ ID NO:2, said first polynucleotide being operably linked to a promoter which drives expression of said LF protein or fragment thereof in cells of a mammalian subject, and;

(b) a second isolated polynucleotide which encodes a *B. anthracis* protective antigen (PA) protein, or a fragment thereof that contains amino acids 204 to 764 of SEQ ID NO:4, said second polynucleotide being operably linked to a promoter which drives expression of said PA protein or fragment thereof in cells of a mammalian subject,

wherein said LF protein or fragment thereof lacks metalloproteinase activity.

26. (currently amended) The immunogenic composition of claim 24 wherein said first and second isolated polynucleotides are on separate polynucleotide constructs.

27. (currently amended) The immunogenic composition of claim 24 wherein said first and second isolated polynucleotides are on the same polynucleotide construct.

31. (currently amended) The immunogenic composition of claim 24 wherein said first isolated polynucleotide encodes sequentially amino acids 34 through 719 of SEQ ID NO. 2, an amino acid other than glutamic acid, and amino acids 721 through 809 of SEQ ID NO. 2.

41. (currently amended) The immunogenic composition of claim 24 wherein each of said first and said second isolated polynucleotides is incorporated into a mammalian expression vector.

42. (currently amended) The immunogenic composition of claim 24 wherein said first and said second isolated polynucleotides are incorporated into the same or separate mammalian expression vectors.

45. (previously presented) The immunogenic composition of claim 41 wherein the mammalian expression vector is a viral expression vector.
46. (previously presented) The immunogenic composition of claim 41 wherein the mammalian expression vector is a eukaryotic expression plasmid.
47. (currently amended) The immunogenic composition of claim 42 wherein said first and said second isolated polynucleotides are incorporated into the same or different viral expression vectors.
48. (currently amended) The immunogenic composition of claim 42 wherein said first and said second isolated polynucleotides are incorporated into the same or different eukaryotic expression plasmids.
49. (currently amended) The immunogenic composition of claim 24 wherein each of said first isolated polynucleotide and said second isolated polynucleotide ~~that~~ does not become integrated into the genome of ~~the~~ a mammalian subject's cells when said polynucleotides are introduced into said cell.
50. (currently amended) The nucleic acid based composition of claim 24 wherein each of said first and said second isolated polynucleotides become integrated into the genome of a mammalian subject's cells polynucleotides are introduced into said cells.
53. (previously presented) The immunogenic composition of claim 24 wherein each of said first and said second polynucleotides is incorporated into a construct selected from the group consisting of linearized DNA, linearized RNA, a DNA plasmid, a viral vector, and a bacterial vector.
54. (new) An immunogenic composition comprising
- (a) a first mammalian expression vector comprising a polynucleotide which encodes a mutated *B. anthracis* lethal factor (LF) protein, or a fragment thereof that contains amino acids 42 to 285 of SEQ ID NO:2, said first polynucleotide being operably linked to a promoter which drives expression of said LF protein or fragment thereof in cells of a mammalian subject, and;
 - (b) a second mammalian expression vector comprising a polynucleotide which encodes a *B. anthracis* protective antigen (PA) protein, or a fragment thereof that contains amino acids 204

to 764 of SEQ ID NO:4, said second polynucleotide being operably linked to a promoter which drives expression of said PA protein or fragment thereof in cells of a mammalian subject,

wherein said LF protein or fragment thereof lacks metalloproteinase activity.

55. (new) An immunogenic composition comprising

a mammalian expression vector comprising

a) a polynucleotide which encodes a mutated *B. anthracis* lethal factor (LF) protein, or a fragment thereof that contains amino acids 42 to 285 of SEQ ID NO:2, said first polynucleotide being operably linked to a promoter which drives expression of said LF protein or fragment thereof in cells of a mammalian subject, and;

(b) a polynucleotide which encodes a *B. anthracis* protective antigen (PA) protein, or a fragment thereof that contains amino acids 204 to 764 of SEQ ID NO:4, said second polynucleotide being operably linked to a promoter which drives expression of said PA protein or fragment thereof in cells of a mammalian subject,

wherein said LF protein or fragment thereof lacks metalloproteinase activity.